

Appl. No. 09/851,587
Amendment Dated January 5, 2005

Attorney Docket No.: ONX-117A

AMENDMENTS TO THE CLAIMS

Kindly cancel claims amend claims 4, 6, 8, and 9 and cancel claims 3, 5, 7 and 26-29 as shown in the listing of claims below. This listing of claims will replace all prior versions, and listings of claims in the application.

LISTING OF CLAIMS

5

- 1 1. A method for measuring a position of a micro machined optical element, comprising:
 - 2 a) disposing at least one magnetic sensor on the micro machined optical element;
 - 3 b) exposing the at least one magnetic sensor to a magnetic field; and
 - 4 c) measuring a change in a property of the at least one magnetic sensor as the position of the
 - 5 micro machined optical element changes,
 - 6 wherein the micro machined optical element includes a moveable portion and the at least
 - 7 one magnetic sensor is disposed on the moveable portion,
 - 8 wherein the micro machined optical element includes a fixed portion and at least one
 - 9 sensor further includes one or more magnetic sensors disposed on the fixed portion, and
 - 10 wherein the fixed portion includes a base and the magnetic sensor that is disposed on the
 - 11 fixed portion is disposed on the base.
- 1 2. (original) The method of claim 1 wherein the magnetic sensor senses a magnetic field that is
- 2 used to actuate the micro machined optical element.
- 1 3. (cancel)
- 1 4. (currently amended) The method of claim [[3]] 1 wherein the at least one magnetic sensor is
- 2 selected from the group consisting of , magneto resistive sensors, giant magnetoresistance
- 3 sensors, colossal magnetoresistance sensors, anisotropic magnetoresistance sensors, magnetic
- 4 tunnel junction devices, Hall effect sensors, flux sensing coils, magnetostriction sensors and
- 5 magneto optic sensors.
- 1 5. (cancel)
- 1 6. (currently amended) The method of claim [[5]] 1 wherein the magnetic sensor disposed on
- 2 the fixed portion is disposed on a sidewall of the fixed portion.
- 1 7. (cancel)

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- 1 8. (currently amended) The method of claim [[5]] 1 wherein the fixed portion includes a top
2 chip and the sensor is disposed on the top chip.
- 1 9. (currently amended) The method of claim [[5]] 1 wherein the sensor that is disposed on the
2 movable portion and the sensor that is disposed on the fixed portion are electrically coupled
3 in a bridge circuit
- 1 10. (original) The method of claim 9 wherein the bridge circuit is a Wheatstone bridge circuit.
- 1 11. (original) The method of claim 1 wherein the magnetic sensor senses a sense magnetic field
2 that is separate from a magnetic field that actuates the micro machined optical element.
- 1 12. (original) The method of claim 11, wherein a magnetic structure disposed on the micro
2 machined optical element creates or changes the magnitude or direction of the sense
3 magnetic field.
- 1 13. (original) The method of claim 12, wherein the at least one magnetic sensor is selected from
2 the group consisting of , magneto resistive sensors, giant magnetoresistance sensors, colossal
3 magnetoresistance sensors, anisotropic magnetoresistance sensors, magnetic tunnel junction
4 devices, Hall effect sensors, flux sensing coils, magnetostriction sensors and magneto optic
5 sensors.
- 1 14. (original) The method of claim 12 wherein the at least one magnetic sensor includes a
2 magnetoresistive sensor characterized by a serpentine shape.
- 1 15. (original) The method of claim 12 wherein the at least one magnetic sensor includes two or
2 more magnetic sensors.
- 1 16. (original) The method of claim 15 wherein the two or more sensors are coupled together in a
2 bridge circuit.
- 1 17. (original) The method of claim 16 wherein the bridge circuit is a Wheatstone bridge circuit.
- 1 18. (original) The method of claim 11 wherein the micro machined optical element includes a
2 moveable portion wherein the moveable portion is moveable with respect to an axis.

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- 1 19. (original) The method of claim 18 wherein the magnetic material is disposed substantially
2 parallel to the axis.
- 1 20. (original) The method of claim 19 wherein the at least one sensor includes a magnetoresistive
2 sensor;
3 wherein the magnetoresistive sensor has a "C" shape having a gap;
4 wherein, in at least one position of the moveable element, the magnetic material is disposed
5 within the gap.
- 1 21. (original) The method of claim 18 wherein the magnetic material is disposed substantially
2 perpendicular to the axis.
- 1 22. (original) The method of claim 21 wherein the at least one sensor includes a magnetoresistive
2 sensor;
3 wherein the magnetoresistive sensor has a "C" shape having a gap;
4 wherein, in at least one position of the moveable element, the magnetic material is disposed
5 within the gap.
- 1 23. (original) The method of claim 1, further comprising:
2 measuring a temperature; and
3 compensating for a change in the property of the at least one magnetic sensor with
4 temperature.
- 1 24. (original) The method of claim 23, wherein the compensating step includes determining a
2 relationship between the property of the magnetic sensor and the measured temperature.
- 1 25. (original) The method of claim 23, wherein the compensating step includes regulating the
2 temperature to maintain the temperature within a desired range.
- 1 26-29 (cancel)